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ABSTRACT

The basic proposition of this study is that five dimensions of educational quality can serve as significant goals, that educational objectives emerging from the goals can be identified, that by improving and delivering school services and processes of quality we can elevate levels of student achievement and significantly advance students toward specific objectives and the broader goals. Definitions for five dimensions of educational quality are advanced: human quality, quality of skills, quality of knowledge, learning quality, and civic quality. These five dimensions of quality are proposed as goals. Specific educational ingredients that emanate from these components of educational quality are appraised, and some school services and processes that demonstrably advance student achievement toward goals are identified. Among school services are teachers, instructional resources, curriculum facilities, and administration; while school processes include the teaching-learning process, individualized instruction, flexible scheduling, nongraded class levels, and many others. The author then considers measurement of student progress and evaluation of school services and processes as means for judging the relationship between the process of education in the school and student advancement toward goals of educational quality. An annotated bibliography accompanies the essay. (Author/JLB)

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On Quality in Education

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On Quality in Education

John S. Gibson

Schools are for students. What takes place in the schools may help students to achieve, may impede their achievement, or may do both. If we really believe that schools are for students, however, we must develop viable and significant relationships between what we want schools to do for students and ways of advancing them toward broad goals. It is crucial to develop specific educational objectives for those goals, provide school processes and services which can advance students toward the objectives and goals, and measure and evaluate all steps of this sequence.

The basic proposition of this study is that five dimensions of educational quality can serve as significant goals, that educational objectives emerging from the goals can be identified, that by improving and delivering school services and processes of quality we can elevate levels of student achievement and significantly advance students toward specific objectives and the broader goals. The quality of education students receive in the schools directly affects their life opportunities and options and also the nation and world in which they live. Therefore, it is imperative that quality in education receive prime consideration in any deliberation about the entire process of education in our schools.

In this essay, we advance definitions for five dimensions of educational quality: human quality, quality of skills, quality of knowledge, learning quality, and civic quality. These five dimensions of quality we propose as goals. Specific educational ingredients which emanate from these components of educational quality are appraised, and some school services and processes which demonstrably advance student achievement toward goals are identified. Among school services are teachers, instructional resources, curriculum, facilities, and administration, while school processes include the teaching-learning process, individualized instruction, flexible scheduling, nongraded class levels, and many others. We then consider measurement of student progress and evaluation of school services and processes as means for judging the relationship between the process of education in the school and student advancement toward goals of educational quality.

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Our concern is, therefore, with goals, school services and processes, and measurement and evaluation as the essential and interrelated ingredients of quality in education. None properly can exist without the others. We emphasize the capacity and potential of the school for advancing students toward goals of quality and thus toward expanding life opportunities and options. We take issue with those who claim that the socioeconomic status of the student and other out-of-school factors and forces are practically the exclusive determinants of student achievement. We appraise the implications of this essay for the Colorado General Assembly and for leadership and services by the Colorado Department of Education with respect to Colorado students and schools. Finally, we point to the need for accountability by educational decision makers to the publics they serve, including students, on what they are or are not doing to advance quality of education in the schools. A chart outlining the basic organization of this essay is on page 31.

An annotated bibliography accompanies this essay. It contains citations for all references in the essay, for studies relevant to each section of the essay, and for specific studies, projects, and organizations concerned with the dimensions of quality in education set forth in the essay.

I. Goals for Quality in Education

Quality of education is the prime goal of the process of education in the schools. Specifically, we hold that the principal goal of each school and each school system should be to increase the potential of every student in each of five interrelated areas of educational quality: human quality, quality of skills, quality of knowledge, learning quality, and civic quality.

A. The Dimensions of Educational Quality

The quality of the human being is enhanced through a positive self-concept and by physical and mental good health. Quality of social well-being is also the person's sense of being comfortable with others and a sensitivity and empathy with respect to others.

Skills include reading, writing, speaking, hearing, computation, and physical facility. Vocational skills are also fundamental. Quality of skills thus means the capacity of the person to be effective in the exercise of these skills so that he may learn and know and thereby may be an effective person in his society. Clearly, basic skills must be mastered early in life and constantly be expanded and improved during the course of public school education.

Knowledge we take to be bodies of information about man and society, past and present, and the content of the academic disciplines, including the

humanities, mathematics, the sciences, philosophy, and many others. Quality of knowledge is knowing about that which is important and relevant to one's upward educational mobility, to one's profession or vocation, to human and civic efficacy, to family life and leisure time, and to the general advancement of one's life opportunities and options.

Learning is one's receiving bodies of knowledge and information about practically anything, giving this some order and judgment through the processes of the mind, and retaining some of it for use through the motor system of the body. The quality of learning is concerned with initiative in discovering knowledge as well as receiving it from others, giving sober reflection and critical judgment to what the senses receive, systematically ordering and conceptualizing that knowledge, rejoicing in the processes of learning and in the innate curiosity of the human being, continuing to want to learn, and using learning to change and to adapt to change. Skills, knowledge, and learning are intertwined in many ways. Skills are the means to acquire knowledge or content, while learning is a process that gives coherence and meaning to what is acquired and to how it is used.

The civic dimension of the person is concerned with the rights and duties of citizenship which he enjoys and enacts in society. Civic quality is concerned with the "effective" citizen. He respects and abides by the law, participates in an enlightened manner in shaping or changing that law, pursues the ideals of democratic human relations, exercises responsibility for his economic and social behavior, and has a healthy altruism for those who do not or cannot exercise that responsibility. He is loyal to his nation, but he also earnestly seeks to bring the realities of that nation closer to its ideals.

B. A Rationale for Quality Goals

A rationale for what we have said thus far is in order and may be set forth in four points. In the first place, goals are vital to progress in education. Secondly, although our dimensions of educational quality are not absolute, we note that many judgments are constantly being made about educational quality, and thus we claim an equal right to present our goals and to encourage a dialogue among many on their validity and utility. In the third place, the role of the school and educators in helping young people to increase their potential in advancing toward goals is preferable to homogeneous classes and to measuring student advancement on a standardized and often national basis. Finally given what we think we know about the future of man and society, the quality of learning deserves major emphasis.

1. The Value of Goals in Education

Seneca, the Roman philosopher, reminds us that if we do not know to which port we are sailing, no wind is favorable. Goals are essential in providing ideals for our efforts, in determining strategies in getting to where we want to go, and in measuring and evaluating what we are doing to, for, and with young people in the schools.

Goals are ideals in a sense. We may never attain them, as Plato noted, but without them, we lack vision, hope, and a positive approach to whatever we are doing. Plato acknowledged that perhaps his ideal of a philosopher king might never be realized, but is it not far better to have a vision of an ideal and to strive toward it than to have no goal at all? Secondly, goals are necessary if we are to determine effective strategies in education, or means toward ends. If we really believe, for instance, that a desirable goal is to increase the student's potential in terms of his civic quality, and if one component of civic quality is democratic human relations, then a series of strategies through the process of education suggest themselves in advancing the student toward the goal. We can identify school processes and services which appear to contribute effectively toward student advancement in this area; and we certainly know many school processes and services which decrease the likelihood of student progress in democratic human relations. Finally, without goals, we can establish no reliable measures with respect to student progress. As students are engaged in the teaching-learning process and as they advance up the grades in the schools, presumably we are taking them somewhere, but toward what, and how do we know? Goals, both in their idealistic and practical dimensions, sensible strategies as means toward ends, and reasonably reliable measures--all are vital to quality in education.

2. Judgments About Educational Goals and Quality

The general purposes of education have long eluded precise definition, and perhaps this is as it should be. Aristotle offered words of wisdom on this subject more than two thousand years ago:

> All people do not agree in those things that a child should be taught, both with respect to improvement in virtue and a happy life; nor is it clear whether the object of it should be to improve the reason or rectify the morals. From the present mode of education, we cannot determine with certainty to which men incline, whether to instruct the child in what will be useful to him in life, or what is excellent, for all of these things have their separate defenders.

The goals for educational quality we articulate, of course, are another statement on this important matter. We trust that they may contribute toward a more meaningful dialogue on goals, and thus on strategies or school processes and services, and how student achievement toward educational goals might better be measured.

Some might claim that it is presumptuous for anyone to talk about "goals." The fact remains that each day and year, countless judgments are being made about educational quality and how students are or are not advancing toward objectives. Directly or indirectly, we delegate to many others authority to establish educational goals and define educational quality.

In our schools, teachers make almost countless decisions about goals and student achievement as they constantly grade student progress toward some explicit or implicit goal. Frequently, it is difficult to discover what goals teachers and schools have as criteria for educational stragegies and, therefore, measurement of student achievement. What does a B in an eleventh-grade course in United States history actually mean as compared with what standards and norms and with respect to what objectives for that course? There are many other kinds of questions one could raise about the millions of judgments, made throughout the academic year by teachers and schools, with respect to educational quality and student progress toward whatever goals for quality are assumed, if any at all.

Of equal significance is the fact that we live in a credentials society permeated by a procedure for testing students as they progress (or do not progress) toward attaining diplomas and degrees viewed as necessary for successful entry into higher levels of education and the professional and vocational world. A great variety of standardized tests (other than tests by teachers in the schools) confronts the student from kindergarten through grade 12. Among the most important insofar as most educators and parents are concerned are those administered by the College Entrance Examination Board, which have basic influence on admission to college. In many instances, the blue ribbons of excellence in American education are pinned on those school systems whose students perform very well on the "college boards." Thus such schools appear to be successful in helping students to progress toward the principal goal--admission to college. For many schools, this is the prime goal, and all other goals take a back seat, as do school services and programs which are not oriented toward equipping students with bodies of knowledge and skills necessary to perform well in the testing process.

We seriously question any school system's developing educational strategies almost solely oriented toward college admission. Education is

a process; it should be one which will advance students toward higher levels of learning, whether through formal education or by their own efforts outside of educational institutions. We do not question the value of higher education. Our main complaint is that quality of education in America is almost exclusively associated with procedures designed to get students into institutions of higher learning, and these procedures revolve around accumulating bodies of knowledge and educational skills that will have some kind of regurgitative magic upon the occasion of testing.

Emphasis on knowledge and skills as means to ends thus disregards to an appreciable degree the human quality of the individual student, his learning quality, and his civic quality as well. These other components of educational quality, while often identified by schools as educational goals, are generally not supported by effective school services and programs designed to advance students toward them, and students are almost never evaluated in terms of how they are advancing toward such goals.

We hold, then, that the many judgments about educational goals and quality education in this nation leave much to be desired. We agree with this statement of the broad Pennsylvania project on quality and means toward quality objectives, that any school program and evaluation of that program "which does not assess personal and social as well as mental growth is deficient as a basis for determining whether or not the program in any school district is educationally adequate." Although the goals we present may have shortcomings, at least they deal with the student as a whole person, and they are relevant for all kinds of students.

3. Increasing the Potential of the Student

Because of physical or mental maladjustments, about five percent of American students cannot participate effectively in normal educational institutions. The rest, however, have a basic potential which the process of education can increase with respect to achievement, providing those conducting that process are effective and dedicated and really believe that all students can achieve well.

Increasing the potential of students can mean many things. For us, it means that each student is an individual and that his achievement should not always be appraised in terms of a comparison with other students in his school or (according to nationwide standardized tests) with all other students in the United States. We thus refer to increasing a student's potential to progress toward increasingly high levels of achievement in terms of the dimensions of educational quality we set forth above and not in terms of how well a student tests vis-à-vis others.

"Increasing potential" of students also means that we de-emphasize minimum standards of educational quality. We vastly prefer to aim for the skies. For instance, we often read about the need to expand educational opportunity for students. However, "equality" may be at different levels, and often minimum standards for "equality" may have little to do with quality as such. We agree with Harold Howe, who calls "not for equal education but better than equal," although we also hold that all our students have the right to equal access to educational opportunity and quality education.

For those who might question the concept of increasing the potential of each student, or maximizing one's capacity in education, we turn to words by John Gardner. In education, "we wish each one to achieve the promise that is in him. . . . education is essential not only to individual fulfillment but to the vitality of our national life." Will French notes that "education should help each young person realize his fullest possibilities . . . for youth to become all that is within them to be . . . (and) to become and not merely be." The eminent educator, Ralph Tyler, recently wrote that:

> . . . for the individual child, education was to provide the opportunity to realize his potential and to become a constructive and happy person in the station of life which he would occupy because of his birth and ability. . . . Today, these remain two of the educational functions of our schools, recognized by the public generally and firmly embedded in our thinking in light of changed social conditions, new knowledge, and prevailing attitudes of the times. The goal of individual self-realization is even more necessary for the schools to stress in our mass society where economic, political and social demands are frequently heard more distinctly than the demands of the individual. . . .

This assumes, of course, that educators will respect the fact that all students have potential. In many tragic cases, teachers and schools damage and then kill the natural curiosity of children and their innate desire to discover, to imitate, and to learn. It is for the schools and the people within them to develop that potential of curiosity and quest for discovery, to nurture the profound potential in all people, young and old, and to join with the out-of-school world in advancing students toward all domains of quality education.

Finally, the possible potential of some students does not always come out well in the kinds of testing apparatus presently available and used in the schools. Let us remember the marvelous perception of learning

given to us by Thoreau: "If a man does not keep pace with his companions, perhaps it is because he hears a different drummer." All children hear different drummers, but for too long we have assumed that the classroom teacher can be the same drummer for all his students. More and more data tell us that students learn better if they have options to hear their own drummers. Is this not better than a teacher's seeking to "drum" it all into the entire class and being successful only with those who "dig" the drummer?

This is particularly true with regard to the standardized testing process. Some students can cope with it and toss back what is easy for them to recall. Are they better learners than others who, for instance, are more careful and patient learners? What about students whose facility for taking tests is not well-honed or whose capacity to shine is in other areas of ability, such as human or civic quality? Is "potential" shown only in knowledge recall and skills, upon which all the testing concentrates? We believe that it is not.

4. The Quality of Learning

As we look into the 1970's and beyond, quality of learning as an educational goal increases in importance. We highly value human quality, the quality of skills, and civic quality; however, when it comes to comparing the accumulation of knowledge with the facility for learning--and for continuing to learn--the latter becomes vastly more important.

Long ago, Henry Adams said that "they know enough who know how to learn." This becomes all the more relevant as we view the years ahead. In A. D. 2,000, today's first-grader will be 34 years old, and today's twelfth-grader will be 48. One authority notes that:

> . . . thirty years from now our youngsters will be molding and making a century which we today can barely imagine, much less understand. They will be processing information yet to be developed. They will be solving problems yet to be defined. They will be facing challenges yet to be conceived.

All projections for the future--those dealing with population, science and technology, urbanization, race relations, international affairs, and many others--point toward a world that we can only guess at today. In our own youth, we thrilled at Buck Rogers in the twenty-fifth century, but now we realize that Buck will (almost, has!) come some five hundred years early. For too long, we have assumed that learning ends where formal education ends. If the process

of education is to have any value at all, it must help young people in the schools to learn, to keep on learning, and to want to keep on learning. George R. Rogers puts it this way:

> Teaching and the imparting of knowledge make sense in an unchanging environment. This is why it has been an unquestioned function for centuries. But if there is one truth about modern man, it is that he lives in an environment which is continually changing.
>
> We are . . . faced with an entirely new situation in education where the goal of education, if we are to survive, is the facilitation of change and learning. The only man who is educated is the man who has learned how to learn; the man who has learned how to adapt and change; the man who has realized that no knowledge is secure, that only the process of seeking knowledge gives a basis for security. . . .
>
> I see the facilitation of learning as the aim of education, the way in which we might develop the learning of man, the way in which we can learn to live as individuals in process. I see the facilitation of learning as the function which may hold constructive, tentative, changing process answers to some of the deepest perplexities which beset man today.

That which we call knowledge--facts, data, statistics, formulae, and dates--doubles about every ten years. One authority has noted that "there is about one hundred times as much to know now (1966) as was available in 1900; by the year 2,000, there will be over a thousand times as much knowledge." Today, some 100,000 educational journals are being published in more than 60 languages, and this may be expected to double by 1985. One does not question the value of what we call knowledge or facts, but the school cannot expect the student to absorb this quantity of knowledge. The school can, however, help to equip the student to grasp the basic structure and concepts of this knowledge, the ways in which such structure and concepts can serve as foundations for learning, and how to relate new bodies of knowledge to these foundations, and how to put all of this to productive use in the years ahead.

New bodies of knowledge replace many other categories of knowledge. In 1980, for instance, about half the workers in the United States will be at jobs that do not exist today. Although many kinds of facts and

statistics about social and civic life will be as enduring and as necessary as they always have been through the recorded history of mankind, other bodies of knowledge which have little or no value for the rapidly changing world of today and tomorrow may well have little place in the process of education. It is the uses to which knowledge is put that count. Clifford F. S. Bebell declares that "if there is to be any conflict between the acquisition of knowledge and the development of attitudes and habits for effective uses of knowledge, the latter must take precedence over the former."

Thus we emphasize the quality of learning as a key educational goal of quality. Learning is a process, and we have learned much about this process that should have prime emphasis in the school. Through a reassessment of the concepts of the various disciplines and skills that normally are found in the curriculum, we may foster a process of learning which can help the student to learn more, and earlier in his life, to be a more effective learner, to be pleased with his discovered capacity to learn, and to continue to learn after he receives some kind of reward or credential. Unless he keeps on learning and keeps on adapting to the uncharted changes that will characterize the future (and helps to bring about change himself), his professional or vocational efficacy will be greatly limited, his civic opportunities stifled, and his life opportunities and options much reduced. Alfred North Whitehead once said that "knowledge isn't just having the dignity that goes with possession. It all depends on who has knowledge and what he does with it." The joining of relevant knowledge with the capacity and desire to learn and to keep on learning will increasingly be the central mission of education.

Perhaps our articulation of five interrelated dimensions of educational quality does not require this rationale; we submit, however, that the four points above are forceful reminders that goals are essential in any discussion of quality in education. Our principal point is that quality is not limited to knowledge and skills. We must give serious consideration to all of the five dimensions of educational quality and then examine carefully what we can do and what we should avoid in helping students to advance toward these goals.

II. Objectives for Quality in Education

An "objective" is a specific and measurable output which is the result of what school services and processes do with, to, and for students. Specific objectives are identifiable and generally measurable steps toward the overarching goal of educational quality which we view as having five dimensions. Three basic objectives are as follows: cognitive, or knowledge; affective, or values and attitudes; and psychomotor, or overt behavior. "Knowing about," "feeling toward," and merging "knowing" and "feeling" into human behavior are objectives and outputs of education.

It would be presumptuous of us to spell out in any detail the things students should know, value, and how they translate knowing and valuing into overt behavior. This vital task must be performed by educators in the schools and in educational agencies, and we suggest that there are many contributions students can make toward an articulation of objectives. We shall, in Section III of this essay, set forth some school services and processes which appear likely to advance students toward objectives and goals. All of this is part of the sequence of quality education we present in this essay, and an example of this sequence is as follows.

Civic quality is a goal. One dimension of civic quality is democratic human relations. In terms of educational objectives, we should like to have students know about the richness of cultural diversity in the United States (cognitive); value that diversity and have favorable and nonprejudicial attitudes toward members of groups other than their own (affective); and overtly behave in a sensitive, empathic, and nondiscriminatory manner toward other human beings (psychomotor). We know that all students will not reach the high expectations of this goal or the three dimensions of educational objectives with respect to the goal of democratic human relations. We can, nevertheless, aim upward rather than set minimum standards for these objectives, and we must do so. Measurement provides indications of how students are progressing toward the objectives and the goals, and the desired output would be increasing the student's potential with respect to the objectives and the goal of civic quality.

Furthermore, we can identify specific school services and processes which can advance students toward objectives, and we certainly can point to school services and processes which impede student progress in this area. We shall return to this point in our section on student services and processes.

Clearly, the objectives we suggest for the goal of civic quality, and thus of democratic human relations, may not meet with approval by others. All we are saying here is that the cognitive, affective, and psychomotor objectives should be associated with each goal, and that school systems, the State Department of Education, attentive members of the public, and students should assume the responsibility for establishing specific objectives, and for different grade levels. To put the matter another way, what bodies of knowledge, what attitudes and values, and what behavioral characteristics do school systems wish to have for their students in terms of educational outputs? Are these outputs related to the five dimensions of educational quality? Has student potential for advancing toward goals really been advanced through the process of education? These are the kinds of questions we think educators and educational decision makers should properly ask and should answer as carefully as they can.

III. School Services and Processes

School services and processes together determine how the school advances or retards student progress toward objectives and goals. School services include teachers, instructional materials, curriculum, administration, libraries, guidance and counseling, physical facilities, educational technology, audio-visuals and other media, paraprofessionals and other aides, health and physical education services, and others.

School processes include the classroom teaching-learning process, or interactions between teachers and students, and such components of this process as individualized instruction, engagement of the student in the classroom process, seminars, independent study programs, team teaching, differentiated staffing, and flexible grouping. Other school processes are modular scheduling, tracking, nongraded groupings or levels, nongraded marks, cocurricular activities, special education, the community school concept, and relating the teaching-learning process to out-of-school educational processes. There are, of course, many interrelationships between and among services and processes.

The sequence presented in this study relates life opportunities and options to educational goals and objectives and suggests that school services and processes of genuine quality can advance students toward objectives and goals and thus expand student life opportunities and options. A study by James Guthrie and associates, entitled Schools and Inequality, develops this sequence in some detail and cites extensive data with respect to the links among the segments of the sequence. The authors point to the vast inequities in American life which are largely attributable to the differences in school services students receive and consequent variations in student achievement and life opportunities. They also provide data which show that disadvantaged students receive inadequate services and thus do not achieve well. As adults, these students suffer from poor life opportunities and have children who go through the same cycle. On the other hand, students from advantaged environments have better services, achieve well, and have more life opportunities, and their children are generally privileged to repeat their parents' cycle. The reason for this obviously is that socially and economically advantaged students tend to live in communities or parts of communities which can afford better school services and processes, while the reverse is true for disadvantaged students. Unless poor students in poor schools are bussed to affluent schools, they must contend with the inadequate education delivered to them by the schools they attend. Therefore, the schools and the services and processes in the schools substantially contribute toward determining student achievement and life opportunities. Inequities of educational opportunity result in an economic and social polarization in our society, and this is a situation we no longer should tolerate.

Many recommend various kinds of school-aid formulas which will enable more state funding for economically and socially disadvantaged communities or parts of communities. But "more money" will not make the real difference. What will count is installation of school services and processes that are likely to advance student achievement toward objectives and goals, and (on the other side of the coin) reduction and elimination of school services and processes which demonstrably impede achievement.

School systems can and do spend money foolishly. Many have incredibly bad business practices. Large sums spent on band uniforms and for laundering basketball uniforms, for example, may produce very little in the way of student achievement. We propose that money be allocated to disadvantaged school systems for buying and delivering school services and processes of quality. This is where we can effectively intervene in the cycle of student socioeconomic status--school services and processes--student achievement--life opportunities--socioeconomic status--and so on.

What school services and processes advance student achievement, and what services and processes impede that achievement? In the next section of this essay, we comment on evaluation of services and processes and on measurement of student achievement. Before we turn to these matters, let us provide some findings about what appears to count and what impedes student achievement. We acknowledge the fact that there is very much we do not know about relationships between services and processes on the one hand and achievement on the other. We claim, however, that the school does and can make a critical difference with respect to student achievement, and that unless we uplift the quality of school services and processes, the life cycle for the disadvantaged will not substantially change. We respond in Section V of this essay to those who claim that the school makes little or no difference at all.

Before we turn to specific services and processes, we must add this note. No claim is being made that school services and processes that appear to advance student achievement will work for all students. We return to Thoreau's point about people's hearing "different drummers." For too long, students have been boxed in and homogenized in the educational process. They are treated for the most part not as individuals but as "the class." The lawyer, doctor, architect, and other professional people tailor their diagnoses and services to individual needs, and it is about time that educators should do the same. What may work for one may not work for all, and vice versa.

A. School Services Which Advance Student Achievement

1. Teachers

The most important "service" the school can provide to promote student achievement is the well-educated, sensitive, empathic, articulate, up-to-date, and well-paid teacher. "Well-educated" means having a liberal education buttressed with relevant programs in methodology. Characteristics of sensitivity and empathy refer to teachers' relating to their students as human beings and not as digits. Articulation or verbal ability is essential, as is keeping abreast of one's professional field and developments and innovations in the teaching profession. A sense of humor, ability to relate with all kinds of people, an "open-door" policy for students, and many other variables could be added.

The study by Guthrie and associates (Schools and Inequality) provides extensive data for these observations, especially as they relate to pupil performance. We especially refer the reader to Chapter Four, "School Services and Pupil Performance," and we quote from some conclusions the authors drew from their extensive inquiries:

> In the preceding section we reviewed seventeen studies which deal with the effectiveness of school service components. These investigations have been conducted using a variety of sample subjects, input and output measures, and controls for what are commonly presumed to be out-of-school influences upon pupil performance.
>
> From an inspection of these digested results it is evident that there is a substantial degree of consistency in the studies' findings. The strongest findings by far are those which relate to the number and quality of the professional staff, particularly teachers. Fourteen of the studies we reviewed found teacher characteristics, such as verbal ability, amount of experience, salary level, amount and type of academic preparation, degree level, and employment status (tenured or non-tenured) to be significantly associated with one or more measures of pupil performance.
>
> In order for school staff to have an effect upon students, however, it is necessary that students have some access to such persons. And, indeed, we also found that student performance was related to some degree to contact frequency with or proximity to professional staff.

The authors also note that in the Coleman study, "the most significant school service variable in explaining student achievement (measured by a vocabulary test) was a teacher characteristic, the teacher's verbal ability."

2. Teaching

It is not only the teacher himself that is basic but what he does to, with, and for students in the classroom teaching-learning process. Engaging students in the teaching-learning process, individualizing instruction, expecting students to succeed, creating relevant learning situations for students, and flexibility in testing students--all are supported by data which say that these teaching methods advance achievement significantly. Participation in the teaching-learning process helps the student to learn better and probably to learn more, while individualization and expectations for success have almost obvious correlations with a positive self-concept.

The bibliographical section to this essay lists a number of projects that demonstrate student achievement as the result of individualized instruction, student participation, and other desirable teaching factors cited above. We also include considerable information on evaluating teachers and teaching.

3. Other Services and Processes

Guthrie and associates provide data showing that "components such as age of school building, adequacy and extent of physical facilities for instruction also are significantly linked to increments in scales of pupil performance. . . . we find that measures such as expenditures per pupil and teachers' salary levels are correlated significantly with pupil achievement measures."

On the other hand, it must be made clear that data on correlating expenditures per pupil with "quality education" relate to what money buys (services and processes of quality) and not to expenditures in general. Again, we refer the reader to the bibliographical section of this essay for particulars about specific services and processes which appear successfully to advance student achievement.

B. School Services Adversely Affecting Student Achievement

In terms of school outputs, we can easily realize that for many students, school services are not effective means to advance achievement and thus life opportunities. Some negative indicators are low test scores, dropout rates, truancy, patterns of norm-violative behavior, and alienation evidenced in many forms. Although there are many out-of-school influences on young people that

contribute substantially toward such outputs, what does the school do or not do to impair student achievement?

Many have written on this point. Jonathan Kozol's Death at an Early Age, Nat Hentoff's Our Children Are Dying, John Holt's Why Children Fail, Herbert Kohl's 36 Children, and James Herndon's The Way It Spozed To Be are only some of the testimonies to the failure of school services to advance students in any of the dimensions of educational quality. A very recent book on this theme is by Jim Haskins, Diary of a Harlem School Teacher (New York: Grove Press, 1970). The New York Times review of this book (February 8, 1970) says that Haskins' testimony reads like Poe's Journal of the Plague Year. Parenthetically, if schools do such damage to students, how can one hold that the school has little if any influence on students?

Research indicates that the teacher is the most important school "service" affecting student advancement. This being so, probably the wrong kind of teacher and teaching likewise can be the most critical factor in obstructing achievement. Negative teacher characteristics include not expecting students to achieve and various other contributions toward students' negative self-concept; bigotry, insensitivity, and lack of compassion and empathy; and considering the class as a homogeneous entity rather than seeking to individualize instruction as much as possible. Further, if student participation in the teaching-learning process appears to advance student achievement, the teacher who lectures all the time and cuts students off from activity in many ways is hardly one aiding student performance.

It has been shown that various aspects of a school system and instructional resources do much to damage children. (Citations on these studies are in the bibliography to this essay.) A perusal of some fairly recent studies confirms this point. A 21-member National Advisory Committee on Dyslexia and Related Reading Disorders reports that 8,000,000 children now in school will not learn to read adequately, and one child in seven is handicapped in this area. Instructional television is falling far short of promise, and serious questions should be raised about investing vast sums in instructional programs which are of dubious value in promoting student achievement. A recent study, headed by former U. S. Commissioner of Education Sterling M. McMurrin, also gave instructional technology very low grades. Studies with respect to instructional materials in the area of intergroup relations point up many errors of omission and commission in treating the race issue in the social studies. If, in other words, advancing democratic human relations through the teaching-learning process is an objective, then we can document severe shortcomings in present school practice.

Most states in this nation mandate the teaching of United States history and the values associated with democracy and the participatory society. A number of extensive research projects on the political socialization of the American student point out quite clearly that through present procedures and services the schools simply are not contributing toward the avowed goal of knowledge about and positive attitudes toward the United States. Studies by Jennings, Patrick, Hess, Ehman, and many others, most of which are independent of one another, confirm this fact. School services appear to be doing very little to advance student achievement in the area of civic quality. Clearly, we are obliged to examine what is not working with respect to student advancement toward objectives and to take definite steps to curtail school services that are of service to no one.

C. Overview

We have not been specific with respect to services that can advance student achievement in each of our five dimensions of quality education. The reason for this is that we feel the determination of educational objectives, or the cognitive, affective, and psychomotor outputs we should like to develop in students as a result of "input" of school services and processes, should be determined by educators and educational agencies on a local or regional basis and not by state governments, the Federal government, or academics far removed from schools and students. We shall, however, take the liberty of discussing in further detail how school services and processes might advance student achievement and progress toward objectives and goals in the domain of civic quality. We noted on page 11 that a dimension of civic quality is democratic human relations and that there are fairly obvious cognitive, affective, and psychomotor objectives for students which should be the outcomes of certain school services and processes.

On the positive side, services and processes for advancing achievement toward objectives and increasing student potential in civic quality and efficacy include a teacher with sensitivity and empathy, a teacher who has a good knowledge of the black experience in American life, past and present, and a teacher who engages students in the teaching-learning process. Interactions among students, frank discussions in the classroom of problems and issues surrounding diversity, and individual and group student projects are means toward ends. Instructional materials that present a balanced picture of American life, past and present, are also necessary, as is support by the school's administration for educational programs in intergroup relations. Some claim that integrated schools are essential for education in democratic human relations, while others point to the need for bussing and redrawing of school district lines to foster

integrated education. We agree, however, with Dr. Ewald B. Nyquist, distinguished Commissioner of Education of the State of New York, who points out that:

> What, then, is integrated education? It is a series of experiences in which the child learns that he lives in a multi-racial society, in a multi-racial world which is largely non-white, non-democratic, and non-Christian, a world in which no race can choose to live apart in isolation or be quarantined by the rest. It is one that teaches him to judge individuals for what they are rather than by what group they belong to. From this viewpoint, he learns that differences among peoples are not as great as similarities, and that difference is a source of richness and value rather than a thing to be feared and denied. And these things can be taught in every classroom even where all children are of the same color, class, and creed. Integration thus can occur anywhere.

On the negative side, we have data which make it clear that textbooks in which Dick and Jane are colored light tan or which have pictures showing Dick and Jane slumming in the inner city make little or no difference, especially with inner-city black students, who identify far more with Cinderella than with antiseptic Dick and Jane. Perhaps it is the message and not the medium. The bigoted teacher who preaches, the teacher who says that race relations are not a problem and merit no attention in the classroom, and administrators who discriminate against black students, especially in categorically delegating them to bottom tracks in secondary education, hardly will advance students toward objectives for democratic human relations and toward civic quality. The same is true with textbooks that contain misstatements of fact about the black experience in American life and that have countless omissions with respect to that experience as well as the history and traditions of other minority groups. In brief, data point to services and processes aiding achievement with respect to objectives and goals, and to those that impede achievement and increasing student potential with respect to civic quality.

We stress again that school services and processes by themselves will never explain why some students achieve and why others do not. All we are claiming is that much can be done better to identify positive and negative school services and processes and with respect to various kinds of students in different school settings. There are almost countless variables in this exceedingly complex area. We believe the time has come for educators to be much more specific

in relating services and processes to student achievement and thus to objectives and goals. Educational accountability makes this task imperative, as does the need to advance quality of education for students and to reduce substantially damaging inequities of educational opportunity.

IV. Evaluation and Measurement

Evaluation of the effectiveness of school services and measurement of student achievement with respect to objectives and goals must both be improved if we are to identify what really works in advancing quality in education and what does not. Evaluation and measurement are obviously interrelated components of the process of finding out what we are or are not doing in education.

Evaluation and measurement are taking place all the time. Educators make judgments constantly with respect to school services and processes (hiring teachers, paying teachers, ordering textbooks, altering curriculum, and so on), and as we have noted above, students are constantly being measured by all kinds of tests. Our plea is for a vast improvement of evaluation and measurement so that the millions of judgments made each day on school services and processes may advance quality education for students.

We can measure many things by specific outcomes, such as the landing of an Apollo flight on the moon or business success through profits. We agree that evaluation and measurement with respect to school services and processes and student achievement as related to objectives and goals are much more difficult. We are a long way from knowing what we should know about relationships among services, processes, achievement, and goals, not to mention the impact on our educational sequence of out-of-school student life and environment.

Has not the time come, however, when we must bring together the multitude of data we have on positive and negative relationships between services and processes on the one hand and student achievement on the other, irrespective of what goals are articulated? Has not the time come to quit using the many difficulties inherent in evaluation and measurement as excuses for not finding what works and what does not? One wonders why educational researchers and the schools themselves have not given more attention to these matters than has been the case. Fortunately, considerable progress has been made in evaluation and measurement, and we cite this work below. Our purpose in this section, then, is to encourage more researchers and school systems to engage in evaluation and measurement projects and to draw upon some of the procedures and instruments set forth in this section for more effective evaluation and measurement.

A. Evaluation of School Services and Processes

Assessing the effectiveness of school services and processes must relate to their impact on student achievement and objectives and goals for that achievement. We usually assume that a basic goal for quality education is the student's entry into an institution of higher education and that the principal objective is high achievement (almost always in a cognitive sense) as evidenced by grades, class standing, and good performance on standardized testing. We do little to evaluate what school services and processes contribute toward high achievement and often assume that it is the out-of-school life and environment of the student that really give him the motivation and capacity to succeed in school.

We would prefer to alter this sequence in a number of ways. We thus suggest broad goals, specific objectives, qualitative services and processes related to objectives and goals, and constant evaluation of which services and processes work and which do not. Because we join other dimensions of educational quality with that of knowledge, clearly our concern with quality education is not confined to helping students to advance to higher education. Even if every high school student in the nation went on to college, the quality of national life would be of very low quality if we were not concerned with human quality and civic quality.

1. Colorado

Fortunately, there are currently several major projects which are concerned with the goals-objectives-school services and processes sequence. As far back as 1962, 11 educational goals were identified for Colorado public schools. During the past several years, the Colorado Department of Education has launched procedures to refine these goals, has sought information on how some students are advancing with respect to goals, and has developed pilot programs in specific academic areas in 31 school districts involving 62,000 students in grades 3, 6, 9, and 12 to explore more effective ways for promoting student achievement. California and Michigan are embarking on similar kinds of programs.

2. Pennsylvania

The Pennsylvania Educational Quality Assessment is perhaps the most ambitious state-wide program for translating our sequence into educational policy. Section 290. 1 of the Pennsylvania School District Reorganization Act of 1963 calls on the State Board of Education "to develop an evaluation procedure designed to measure objectively the adequacy and efficiency of the educational programs offered by the public schools of the Commonwealth . . . tests (to

measure) the achievements and performance of students pursuing all of the various subjects and courses comprising the curricula. . . ." Ten goals for quality education were specified, all of which are incorporated in the five components of quality education cited in this chapter. It was decided to test fifth- and eleventh-graders on how well they were performing with respect to the stated objectives. Fifty elementary and 50 secondary schools were selected on a representative basis throughout the state, and within each school, 30 students were selected randomly for the measurement program. The 1968 publication of this project presents data which relate the factors and services relevant to student performance with respect to each of the ten goals.

The report sets forth the instruments used to test student achievement with respect to the specific goal. Findings with respect to achievement in one area (self-esteem and self-concept) are related to findings in other goal dimensions (skill facility, responsible citizenship, etc.). Ratio of staff per child, effectiveness of the teacher, level of student's previous learning, and relationships between socioeconomic levels and quality of school services--all have an important impact on achievement, but with variations in each goal category. In many cases, the child's socioeconomic status and the teacher's are vital factors at the fifth-grade level, while the peer group and school mores are more important at the eleventh-grade level. The research team points out at the end of Phase I of this extensive study that:

> . . . in many of the goal areas, less than half of differences in pupil achievement is accounted for by individual pupil factors. The indications are strong that school programs can make a difference. . . . with the completion of the first analysis of Phase I data, it is becoming apparent that school processes may have more of an effect on pupil achievement than all of the pupil, school, and community variables combined . . .

The major point is that a state has articulated goals for educational quality and has launched an extensive program designed to see what kinds of variables affect student achievement with respect to those goals. The objective of the Pennsylvania Educational Quality Assessment is, as stated in the original legislation of 1963:

> to provide each school district with relevant comparative data to enable directors and administrators to more readily appraise educational performance and to effectuate without delay the strengthening of the

> district's educational program. Tests developed under the authority of this section /of the statute/ to be administered to pupils shall be used for the purpose of providing a uniform evaluation of each school district. . . . The State Board of Education shall devise performance standards upon completion of the evaluation procedure required by this section.

In other words, standards dealing with school services and processes will be developed if and when sufficient data are assembled to indicate what does work and what does not in advancing students toward goals for educational quality.

3. National Assessment

The "National Assessment of Educational Progress," now administered by the Educational Compact of the States, is the most ambitious program for measuring student advancement toward goals. Launched in 1964, this program includes objectives and instruments for assessing student progress toward objectives. Specific objectives for science, writing, and citizenship have been developed by outstanding scholars and teachers. These objectives were formulated on the basis of three main criteria: Are they considered important by scholars? Are they accepted as an educational task by the schools? Are they considered desirable by thoughtful lay citizens? Then instruments have been and are being formulated to assess student progress toward objectives. In response to the question as to why new instruments for assessing student progress must be developed, project officials note that:

> Current tests in use in the schools have not been constructed to provide a means for assessing educational progress of children. They have been constructed to obtain an average score of classroom, grade, or school, and to identify individual differences in performance. (For instance), one-third of all children in a large metropolitan area recently tested by a well-known achievement test made zero scores. This does not mean that one-third of the city's children learned nothing; it means that the tests had no exercises appropriate for measuring what they had learned.

Other areas to be covered by the Assessment Program are as follows: reading, mathematics, social studies, vocational education, literature, art, and music. Clearly, this national program has and will continue to have a powerful impact

on the entire educational process in the United States. It serves as a solid basis for discussion and articulation of educational objectives and for developing reliable procedures to measure student advancement toward those objectives. We might add that these objectives can be categorized within the context of some of our broader goals for quality education. Unfortunately, they do not appear to focus on the quality of learning or on human quality; however, we assume that "learning" is implicit in the program and that components of human quality will be added later. The National Assessment Program is concerned with goals and achievement and not directly with evaluating school services and processes. However, it is inevitable that this will be done.

B. Measurement of Student Achievement and Progress Toward Goals

We cannot measure student achievement without evaluating the impact of school services and processes on that achievement, or non-achievement. The Pennsylvania project is concerned with services and processes as well as student progress toward goals, and the National Assessment Program must of necessity relate services and processes to advancement toward goals. However, we do take note of measurement of student achievement whether goals are implicit or explicit.

As we point out above, testing takes place in the schools all the time, and often without specific objectives and goals for quality education. Testing, as the National Assessment Program points out, is usually not concerned with progress of students toward objectives but rather with finding out averages. Students who test above the average are the ones who are judged as successes in the process of education, and they are the ones who generally go to college.

Obviously, we take issue with this approach to "testing" student achievement. We feel that a great deal of the current school testing is devoid of measurement of progress toward objectives and that it focuses on inadequate judgments about quality in education and thus quality of achievement. Present testing is almost exclusively related to achievement in knowledge and skills and usually has little or nothing to do with human, learning, or civic quality. It is most damaging to students whose facility for taking tests is not well-honed. Often these young people are adjudged "slow learners" when actually their "slowness" may be a matter of giving reflection to questions and protracted consideration of possible answers. Consider how often tests are timed by a stopwatch, and students, knowing they must give some kind of response, do so quickly and without thought or analysis of questions and possible answers. Students who have the skill for dealing with such testing generally emerge

victorious from the ordeal; those who do not are viewed as poor learners. For these and many other reasons, current patterns of testing, so widespread in the United States, have little to do with quality of education and quality of school services and processes.

The Colorado, Pennsylvania, and National Assessment programs will offer us much guidance for better ways to measure student achievement, especially if we have specific objectives and broad goals. Some other approaches to more effective measurement also provide us with guidance on this important matter. The Bureau of School Programs Evaluation of the New York State Department of Education is developing sets of performance indicators to appraise school effectiveness and point the way to means to improve the schools. Performance indicators should be considered a set of models which relate important variables to the objectives of the schools. According to Dr. David J. Irvine, Chief of the Bureau, "student performance of various kinds make up a major set of educational objectives. Statistical models allow us to explore possible relationships between student performance and other variables such as surrounding conditions, student characteristics and school processes." Much information about these variables is secured by the New York State Basic Educational Data System. Student achievement, noncognitive functioning (motivation, attitudes, etc.), and social functioning are three aspects of student performance which will be measured. Dr. Irvine notes that "first, objectives of the educational system must be stated. This is both a state and local responsibility. Then measures must be selected or developed for each objective." All of this will contribute to producing a set of instruments that will help school officials to decide on the allocation of funds, the patterns of school organization, teaching methods, and the instructional materials best suited for achieving the school's objectives.

The Cleveland-based "Yardstick Project" is working with a number of school systems in using "yardsticks" or various instruments to appraise student advancement with respect to school services and processes. The Project has a "growth gauge" for school systems to use in measuring progress of students in relation to their social and economic backgrounds and their IQ's. This presumes to measure the contribution of the school system to pupil performance. Data also relate educational costs to student performance.

Another measure of student achievement is in the area of performance contracting. Some educational agencies and publishing houses are contracting with school systems under guarantees of student achievement based on certain services. For instance, a contract between the Dorsett Educational Systems and the community of Texarkana at the Texas-Arkansas border, calling for Dorsett to elevate reading levels of students through Dorsett's staff and processes,

is paying rapid dividends for the students. This project and others similar are able to measure achievement of students who use company-provided services and processes against students who do not. This is a very valid way of measuring achievement, and it can be applied to all of our goals for quality education. We foresee a rapid expansion of such performance contracting by educational firms and agencies. If they can do a better job than the traditional school services and processes in advancing student progress toward objectives, then school systems and teachers should stand up and take notice of the impact that performance contracting can and will have on education.

We refer the reader again to the book by Guthrie and associates, Schools and Inequality. The authors cite problems inherent in evaluation of school services and processes and measures of school achievement: "We are perhaps still a long way from a unified theory of learning, but bits and pieces of a theory are beginning to fall into place." They note the "relatively slow development of research strategies and measurement methodologies applicable to education." They add, however, that "despite handicaps, an increasing body of sophisticated research is accumulating on the effectiveness of various school service components," and they review this research in Chapter Four of their study. Their conclusion is important to the thrust of this essay: "The 'stuff' of schools, when available in adequate quality and quantity, influences what children learn. Conversely, relatively inadequate services lead to lower levels of academic achievement." In brief, quality outputs of education and student advancement toward goals for educational quality depend upon the quality, as well as the quantity, of what happens to young people in the schools.

V. The Schools and Quality Education

The Coleman Report, Equality of Educational Opportunity, states that

> . . . schools bring little influence to bear upon a child's achievement that is independent of his background and general social context. . . . this very lack of independence means that the inequalities that are imposed on children by their home, neighborhood, and peer environment are carried along to become inequalities with which they confront adult life at the end of their schooling.

We join those who challenge this assertion. We accept the findings of Guthrie and others on the direct relationship between school services and processes to student achievement, and we subscribe to this major conclusion by

the Pennsylvania Assessment program at the end of Phase I as cited on page 21 of this essay.

Professor Coleman's study was largely concerned with measurement of student skills and how they showed up on school testing and on standardized tests. It had nothing to do with the quality of learning or with human and civic quality, which of course, we include in the overall concept of quality education. The design and statistics of his study, as well as his findings, have been challenged in many ways.

The main difficulty with the Coleman report is the view that some take, notably Presidential Assistant Daniel Patrick Moynihan, that it presents conclusive evidence that schools cannot contribute much to student achievement if the socioeconomic status and environment of the student are disadvantaged. We have referred many times in this study to the fact that advantaged students go to better schools with higher levels of quality services and processes than do disadvantaged young people. We attribute differences in testing and other indicators of differences in student performance between the advantaged and disadvantaged much more to the quality and quantity of school services and processes offered to them by different kinds of schools than to their out-of-school condition and environment. Research by Samuel Bowles finds that "given two students of equal capacity, the one receiving poor quality of services would score at about the 25th percentile on a performance measure whereas the one receiving high quality services would score about the 75th percentile." To claim that the school and accompanying school services and processes do not count and that other factors, including genetic, actually determine achievement and progress toward educational quality simply does not stand up.

We do not dispute the out-of-school influences on school services and processes, and thus on student achievement and post-school opportunities and options. When, however, we talk of "quality in education," we mean the quality of education delivered to and received by students in schools. Only the school can give what young people need to enjoy many life opportunities and options. This cannot be given by home, church, and other institutions unless the whole design and structure of human education are radically altered (as some suggest they should be). It is the school that makes the critical difference, that explains success, or that kills people, as Kozol puts it, "at an early age." (Can one hold that the school makes no difference independent from the background of the student and still claim that schools kill young people?)

In effect, Coleman is saying that because schools make little or no difference independent of the social and economic background of the student, then

socially and economically disadvantaged children are condemned to virtual failure in life in any event, school or no school. We submit that this is grossly incorrect. We hold that school services and processes of quality and quantity can increase potential for all students in advancing toward goals of educational quality. Not all students have the same potential, and all students are different from one another. But advancing achievement and increasing potential with respect to the components of quality in education are possible for all.

This suggest, then, more what the school and its services and processes can do rather than what they are doing now. We disagree with much that is taking place in the schools now, especially their focus on knowledge and skills rather than on all five areas of educational quality, their testing by averages, and the many school services and processes which clearly are not advancing students with respect to objectives and goals. We are concerned with how we can make the schools much more effective agents for increasing the potential of students and for helping them to achieve. We feel confident that this can be done through improving the quality and quantity of school services and processes and through relating in-school learning more effectively to how and what the student learns out of school. More than anything else, this can be done if teachers, administrators, and other school personnel work diligently in improving services and processes and in treating each student as a distinct human being. Naturally, school people need all kinds of support and resources, especially funding. But it is the educators in the schools who can make the school truly effective--an environment in which quality education really can take place. Without the school and its services and processes, quality education is impossible, as is the quality of society itself.

VI. Quality in Education and Accountability

The central thrust of this essay points toward a consensus on goals for quality in education, development of specific objectives, and determination of school services and processes which can advance students toward those objectives and goals. The current operations of the Colorado Department of Education's Task Force on Assessment and Evaluation provide tangible evidence that Colorado is moving in this direction. Hopefully, this essay will contribute in some small measure to the fine work of the Task Force.

The sequence we present for quality in education (goals-objectives-school services and processes relating to student achievement) is not only for consideration and implementation by the Colorado Department of Education. If the sequence has validity, it can serve as means for advancing the concept of accountability in education by all people and agencies that make decisions

concerning the education of our young people. These include the Colorado General Assembly, the executive branch of government of Colorado, public school administrators and educators, local school boards, and educational organizations representing teachers, principals, superintendents, and others.

As public education is in the political domain, many decisions affecting education are made on the basis of the self-interest of the decision makers. A vote in the General Assembly; a judgment by the Governor; decisions by superintendents, teachers, and principals; votes in school committee meetings; and resolutions and actions of educational organizations often tend to reflect constituencies other than the prime constituency for educational decision making--students in our schools. Where decisions in public education do not reflect some genuine attempts to move students toward goals of educational quality, then the publics served by education should demand public accountability for those decisions.

We acknowledge the difficulties in measuring relationships between educational decisions and quality in education. However, we present in this paper what we consider to be substantial data and findings on evaluation and measurement; and throughout the United States, the trend is toward development of educational goals, assessment of student performance, and evaluation of effective and qualitative school services and processes. This sequence is becoming more concrete all the time, and it must be used to demand accountability from those who make decisions in public education.

Our basic recommendation is that the General Assembly, if it finds merit in the content and suggestions of this essay, devise legislation to create the Colorado Educational Accountability Program. The Program should be administered by the Department of Education through its Task Force on Assessment and Evaluation. However, the Task Force should bring into the Program some members of the public at large, some school officials, and some public high school students so that the administration of the Program does not reflect only the views and operations of the Department.

The Program should proceed to develop a state-wide consensus on educational goals and objectives. It should identify the school services and processes which can advance students toward objectives and goals as well as those which impede student achievement. From this sequence of goals-objectives-services and processes, it should develop an instrument which can be used at all levels of educational decision making to appraise those decisions within the framework of goals and means to those goals. The central question would be this: To what extent are decisions affecting school services and processes advancing or impeding student achievement with respect to specific objectives and broader goals?

We then recommend that most of the decisions made by public and school officials be appraised within the framework of the Accountability Program. Assuming there is general consensus on goals and objectives, the principal question revolves around the quality and quantity of school services and processes for advancing students toward those goals and objectives. Are votes by members of the General Assembly making a definite contribution to quality education in Colorado? Are the Assembly and the executive branch of state government, especially the Governor, providing the backing and resources needed by the Department of Education to advance quality in education?

Are decisions and actions by the Department of Education advancing quality education with respect to the public schools in the state? Is the Department providing the necessary leadership and services needed to affect directly the quality of school services and processes? Is the Department organized effectively to deliver what it can toward improving the quality and quantity of school services and processes?

Are superintendents, principals, and teachers providing specific services and processes which can advance student achievement? What school services and processes are currently taking place which retard student advancement? What are the relationships between deliberations and decisions of school committees and quality in education? What can educational organizations contribute to helping their memberships to advance quality in education? These and many other questions provide some direction for developing the Accountability Program.

Each segment of educational decision makers should be required to submit annual written statements giving an accounting of how their overall educational decisions relate to improving school services and processes. The segments, again, are the General Assembly, the Office of the Governor, the Department of Education, school officials, school committees, and educational organizations.

These statements, collected and published by the Accountability Committee, should be distributed widely and given serious consideration by the public at large and also by students. This annual document on educational accountability should serve not only as an assessment of the efficacy of educational decisions but also as a concrete guide for improving the quality of education in Colorado.

A periodic review of goals, objectives, and school services and processes should take place as well as an annual measurement of student achievement with respect to goals, objectives, and services and processes. This measurement

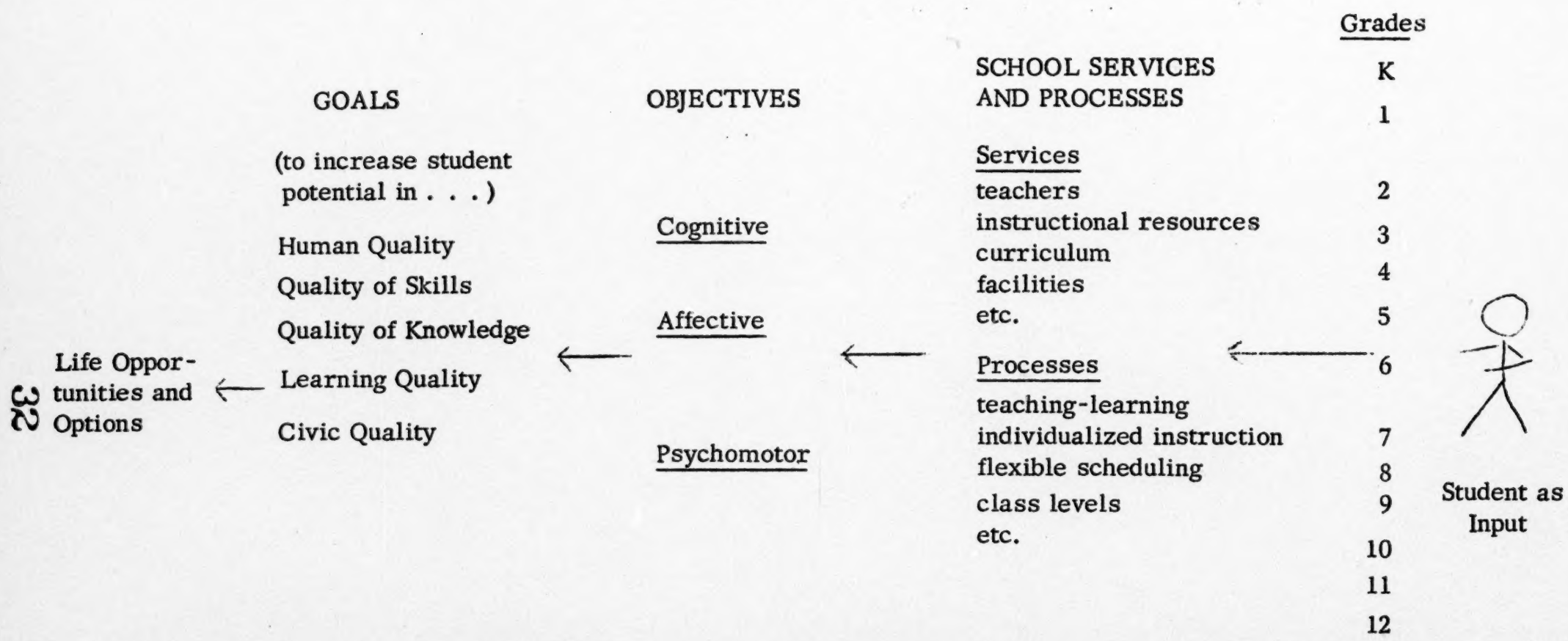
should probably take place at five or six different grade levels. Consideration should be given to relating accountability to educational costs. Papers presented by the Educational Task Force to the Legislative Council this spring will undoubtedly suggest a number of other areas for inclusion in the Accountability Program. The Accountability Committee should examine carefully the Pennsylvania Assessment Program and other assessment and evaluation projects so as to draw from them practices, experiences, and findings which can benefit the Colorado Accountability Program.

It might also be of value to have the legislation creating the Program call for accountability committees at the local level. These committees could be comprised of a wide variety of citizens, including education committee chairmen of local organizations. Students should also be represented. Do not they merit an accounting of educational decision making from those who demand each day an accounting from students? The school superintendent should be the liaison person between the local committee and the school system. In this manner, it may be possible that quality of education at the local level could be increased substantially and that costs for that education could be reduced.

We can make no judgment about what should be done with respect to those whose "accountability" falls short of expectations or reveals that many educational decisions definitely have not advanced the quality of school services and processes. This is for determination by the publics who support education and by the students who inevitably suffer from lack of quality in school services and processes.

We thus return to our first sentence, schools are for students. Each young person has within him the potential to become an adult of quality and to contribute toward the quality of life and society in Colorado, in the United States, in the world, and probably in the broader universe which some day may encompass the human domain. The potential of each person can be reached by qualitative school services and processes, can be cultivated, and can be increased so as to move toward the dimensions of quality we suggest in this essay. The time has come, therefore, to make quality in education a truly operational force for improving the quality of mankind and society. We believe this can be done, and we are grateful for the privilege of offering some ideas toward making schools really for students.

SEQUENCE FOR QUALITY IN EDUCATION



The educational sequence presented in this essay deals with broad goals, specific objectives emanating from the goals, school services and processes which will help to advance students toward the objectives and to increase their potential in the five areas of educational quality. All of this is necessary if we are to have quality of education and expanded life opportunities and options for students. To know how well this sequence is operating, we must constantly evaluate school services and processes and measure student achievement and advancement toward objectives and goals. We call for all educational decision makers to provide an accounting of how their decisions relate to providing school services and processes which will increase the likelihood of quality in education.

BIBLIOGRAPHY

This is a bibliography of studies and projects that are concerned with educational goals; broad research on student services and curriculum areas; research on school services which appear to advance student achievement as well as those which appear to obstruct achievement; studies dealing with testing and evaluation of school services and student achievement; and organizations professionally concerned with testing and evaluation. It is a representative bibliography only and not exhaustive. In fact, there is so much material here that, in some cases, we cite publications which list many more research studies and findings. We are attempting to give the reader an overview of how much available research there is with respect to quality in education, goals and objectives, school services and processes, and evaluation and measurement.

A. Studies with Respect to Educational Goals or Objectives

Benjamin S. Bloom, et al., Taxonomy of Educational Objectives: The Classification of Educational Goals, Handbook I: Cognitive Domain (New York: David McKay Company, Inc., 1955) and David R. Krathwohl, et al., Taxonomy of Educational Objectives: The Classification of Educational Goals, Handbook II: Affective Domain (New York: David McKay Company, Inc., 1964) are masterful studies of goals in education. See also Will French, et al., Behavioral Goals of General Education in High School (New York: Russell Sage Foundation, 1957), and John Gardner's "National Goals in Education," in Goals for Americans: The Report of the President's Commission on National Goals (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1960). Profiles of Excellence (Washington, D. C.: National Education Association, 1966) provides recommended criteria for evaluating the quality of local school systems.

There are many studies which demand that goals be established before any serious planning takes place in education. James E. Bruno calls for goals with respect to state-aid programs in his article "An Alternative to the Use of Simplistic Formulas for Determining State Resource Allocation in School Finance Problems," American Educational Research Journal, November, 1969. The Cooperative Community Educational Resources Center at Boulder, Colorado, has prepared a bibliography of studies on "what constitutes quality education," and many of these publications deal with the shaping of goals. So does Frederic D. Weinfeld in his book, Educational Quality: Definition and Measurement (Washington, D. C.: National Center for Educational Statistics, 1966). Ralph Tyler's fine article, "Purposes for Our Schools," NASSP Bulletin, December, 1968, is a most cogent statement on educational objectives. There are many more.

B. Broad Research Studies with Respect to School Services and Curriculum Areas

Below are listed some studies (and studies of studies!) which provide copious research on many kinds of school services and work in specific curriculum areas. This is just a sample of findings which can give us usable information on improving school services.

The Review of Educational Research (RER), published by the American Educational Research Association, periodically issues extensive reports of research in specific curriculum areas. These publications are of great value to educators who seek to find the latest research in their areas of competence. Some of the recent RER volumes in curriculum areas are as follows: "Language Arts and Fine Arts," April, 1967; "Preservice and Inservice Education of Teachers," June, 1967; "Growth, Development, and Learning," December, 1967; "Instructional Materials: Educational Media and Technology," April, 1968; "Curriculum," June, 1969; "Science and Mathematics Education," October, 1969; and "Methodology of Educational Research,"December, 1969. See, also, Henry S. Dyer, "School Factors" (with respect to student achievement), Harvard Educational Review, Winter, 1968, pp. 23 ff., and Alvin C. Eurich, Reforming American Education: The Innovative Approach to Improving Our Schools and Colleges (New York: Harper & Row, Publishers, 1969). On means to ends, see Guidelines for an Adequate Investment in Instructional Materials (Washington, D. C.: National Education Association and American Textbook Publishers Institute, 1967), and Directory of Research in Social Studies/Social Sciences (Washington, D. C.: Department of Health, Education, and Welfare, 1969).

C. Research with Respect to School Services that Appear to Advance Student Achievement

In our opinion, the best work in this field is Schools and Inequality by Guthrie and associates (cited previously), which not only emphasizes the teacher and teaching as the most important school service but cites many other studies that underline this point. William Glasser's Schools Without Failure (New York: Harper & Row, Publishers, 1969) is an excellent analysis of why children fail and what is needed to reverse that process. Positive approaches by teachers and open-ended class discussions are documented as effective means to ends. Other studies related to teachers include the following: Bruce J. Biddle and William J. Ellena (eds.), Contemporary Research on Teacher Effectiveness (New York: Holt, Rinehart & Winston, Inc., 1964), and O. J. Harvey, et al., "Teacher Beliefs, Classroom Atmosphere, and Student Behavior," in American Educational Research Journal, March, 1968.

It may be of value to cite reports from some projects which point to school services that advance student achievement. These projects involve many different kinds of teaching styles and processes. Most of them accentuate the value to student achievement of individualized instruction.

1. "Individually Guided Education" conducted by the Wisconsin Research and Development Center for Cognitive Learning is a project involving 50 elementary schools in seven states and about 40,000 students, whose advancement in the "three R's" has been quite remarkable. Units of 100-150 children, unit leaders with a team of teachers, aides, interns, ungraded classes, and considerable planning, permit the teachers and aides to respond to children's individual learning needs. The Wisconsin Department of Education is an active participant in this program and is seeking to expand it on a broad basis.

2. Reports on individually prescribed instructional programs in the Philadelphia schools, the Oakleaf Elementary School near Pittsburgh (where much pioneering work in IPI has taken place), and in Elk Grove, Illinois, indicate that IPI shows positive results in the vast majority of places in which this program is used. The Educational Development Laboratory in Philadelphia is working with 164 schools on IPI. Studies show that students like the program and like school better than control groups which do not have IPI, and that it is effective at all learning levels.

3. "Project Plan" on individualized classroom instruction, developed by the National Laboratory for Advancement of Education (Westinghouse Learning Corporation, Palo Alto, California) focuses on learning in accordance with students' abilities and needs. Children are given responsibility for learning, help to develop goals and programs to advance toward goals, and manage their own learning program and pace. Nine thousand children in some 63 schools currently are in "Project Plan," and many more will be involved next year. Again, data indicate that partial planning by students of their educational program and a commitment to perform definitely advance student achievement.

4. "Patterns in Arithmetic" (PIA) is a program reaching 300,000 students and 10,000 teachers in 15 states. The program focuses on extensive teacher education through videotapes and on the assumption that modern-math concepts require extensive teacher retooling and student participation in the teaching-learning process. PIA director is Professor Harry Van Engen at the University of Wisconsin, and provisional findings show that students in the program score higher than half of the nation's students in standard achievement tests.

5. "Project Read" is a new approach to reading in which the English language is broken down to its simplest forms and put back together to

fit the individual pupil's ability to learn. Developed by the Behavioral Research Laboratories at Palo Alto, California, the program is used in 50 cities, including the Bronx and Brooklyn where some 40,000 students participate in the program. Student advancement in reading skills is notable, as specially trained teachers progress from student to student on an individual basis, and each child moves at his own pace. Children's interest in school libraries and in homework is also another positive indicator of performance.

6. Superintendent William Kottmeyer of the St. Louis Public Schools reports considerable improvement in students' reading comprehension and IQ scores through the St. Louis reading program involving intense concentration on word meanings.

7. Educational Testing Service reports that students in 17,600 schools who used the program, "Newspaper in the Classroom," scored higher on every item of a reading comprehension test than did those who had no training in newspaper reading. Relevance was a "relevant" by-product of this program as well.

Our purpose in presenting these data is merely to show that the named studies and projects, as well as many others, point to some school services and processes that appear to advance student achievement in many areas. We are particularly impressed with how strongly individual instruction, student participation and planning, and teacher inservice training correlate with student achievement. We should like to see a compendium of many other similar studies and projects so that we could distill from all of them recurring themes and practices that demonstrably advance student achievement. Other studies can be cited to give considerable support to convictions many of us have about effective student services. Some of these convictions are as follows: teacher expectation of student success and achievement; use of para-professionals to assist teachers in the classroom; options of all kinds for students; immediate rewards for achievement, especially to disadvantaged students; relevancy of content matter to students; fewer tests and less emphasis on grades; and non-graded or ungraded classrooms.

D. Research Indicating Barriers to Student Achievement

Many of the titles presented on page 16 of this essay are familiar to the reader. The dyslexia report was made to the United States Office of Education by Committee chairman, Professor Arleigh B. Templeton of Sam Houston State University. The title of his study is "Reading Disorders in the United States," and the principal complaint was incredibly poor teacher education in reading instruction and lack of certification of millions of teachers of reading

skills. The instructional television report is entitled "A Study of Systemic Resistances to Utilization of ITV in Public School Systems," and the title of the instructional technology study is "To Improve Learning." Both are available at the United States Office of Education.

Among the studies revealing serious shortcomings in civics courses and citizenship education are the following: Kenneth P. Langton and M. Kent Jennings, "Political Socialization and the High School Civics Curriculum in the United States," American Political Science Review, September, 1968, pp. 852 ff.; M. Kent Jennings and Richard G. Niemi, "Political Socialization," Harvard Educational Review, Summer, 1968; Lee H. Ehman, "An Analysis of the Relationships of Selected Educational Variables with Political Socialization of High School Students," American Educational Research Journal, November, 1969, pp. 559 ff.; and John J. Patrick, Political Socialization of American Youth: Implications for Secondary School Social Studies (Washington, D. C.: National Council for the Social Studies, Research Bulletin No. 3, 1967).

E. Studies Concerned with Testing and Evaluating Achievement

Ronald N. Morse's article, "The Influence of Test Difficulty Upon Study Efforts and Achievement," in the American Educational Research Journal, November, 1969, pp. 621 ff., points out the fact that students achieve better and more with less difficult and fewer tests, so perhaps we should not test at all, but should leave it to intuition to judge student achievement. John Holt makes this point in his monograph, John Holt on Testing (Boston: The 8 X 8 Press, 1968). Locating Information on Educational Measurement: Sources and References (Princeton, New Jersey: Educational Testing Service Evaluation and Advisory Series, 1968) is undoubtedly the best bibliography in this area. Our citing this work here relieves us of the necessity to present an extensive bibliography on testing and achievement. See also the quarterly journal, Educational and Psychological Measurement (College Station, Durham, North Carolina), Journal of Research and Development in Education (University of Georgia, Athens, Georgia), and T. L. Eidell and J. A. Klebe, Annotated Bibliography on the Evaluation of Educational Programs (University of Oregon, 1968). J. Alan Thomas's article, "Cost-Benefit Analysis and the Evaluation of Educational Systems" in Proceedings of the Invitational Conference (1968) on Testing Problems (Princeton, New Jersey: Educational Testing Service, 1969) provides much information on cost factors as they relate to various educational objectives.

There is much material on measuring teacher effectiveness. Some studies are as follows: "Evaluating Teacher Performance," Educational Research Service, National Education Association, Circular No. 3, 1969; George Redfern, How to Appraise Teaching Performance (Columbus, Ohio: School Management

Institute, Inc., 1963); and Daniel R. Fred, The Measurement and Evaluation of Teaching: A Conceptualization of a Plan for Use in State Educational Leadership (Tallahassee: Florida State Department of Education, 1967).

F. Organizations and Agencies Professionally Involved in Educational Research, Measurement, and Evaluation with Respect to School Services and Achievement

The United States Office of Education's National Center for Educational Research and Development and the Center's many Educational Resources Information Centers (ERIC's) in specific areas of educational research and development are prime sources of information in this area. See in particular the monthly publication Research in Education and the ERIC Current Index to Journals, and also the Thesaurus of ERIC Descriptors. The Publication Pacesetters in Innovation is also a valuable resource guide. Research in Education is a monthly journal containing abstracts of recently completed research and project reports.

The Educational Testing Service at Princeton, New Jersey, is the principal private organization working in educational testing. Its many publications, annual reports, proceedings of its annual conferences, and other reports provide many sources of information. The Educational Products Information Exchange Institute in New York publishes The Educational Product Report nine times a year, giving data on instructional resources and how they relate to other school services. The National Council on Measurement in Education and its journal, Educational Measurement, are well known in this field, as are its special reports, Measurement in Education. The regional accrediting agencies in the United States, such as the New England Association of Colleges and Secondary Schools, and the many testing programs at the state level, such as the New Hampshire program, also can provide many data on educational research and testing as related to school services and student achievement.

G. Projects and Proposals with Respect to Establishing Objectives and Measuring Student Achievement

We refer the reader to the publication, Phase I Findings: Educational Quality Assessment, by Paul Campbell, et al. (Harrisburg, Pennsylvania: Department of Public Instruction, 1968), for information about the Pennsylvania Educational Quality Assessment program. We interviewed Dr. Robert Coldiron, one of Campbell's associates, with regard to the thrust of this important program. The publication cited above contains the instruments to appraise relationships between and among a number of school services and other variables on the one hand, and student progress toward the ten educational objectives on the other.

There is no doubt whatever that within the next five years or so, assessment of educational programs in relation to goals will be a fact of life. The National Assessment Program is moving along rapidly, especially since it is now administered by the Denver-based Educational Compact of the States. Available publications concerning this program are as follows: National Assessment of Educational Progress: Some Questions and Comments (Washington, D. C.: National Education Association, 1968); National Assessment of Educational Progress: Science Objectives and parallel publications on Citizenship Objectives and Writing Objectives (Ann Arbor, Michigan: Committee on Assessing the Progress of Education, 1969).

Another national thrust in this direction was President Nixon's Special Message to Congress on Education Reform, published in the New York Times on Wednesday, March 4, 1970, page 28, which calls for the establishment of a National Institute on Education (NIE). The NIE's purpose would be to provide research necessary to reform education in the United States and especially to transfer research findings to and from the schools. Its focus would be on what works and what does not so far as school services and other variables are concerned. Commissioner of Education James E. Allen pointed out that "effective educational reform and renewal can hardly be expected in an educational enterprise that devotes less than one half of 1% of its annual budget for research and development." We trust that this new national program will make substantial contributions toward a clarification of goals and how best to help students to advance toward them.

On pages 23, 24, and 25, references were given for measurement of student achievement. An outline of the New York program was presented by David J. Irvine at a conference in Albany on state and national assessment on December 4, 1968. Dr. Irvine's paper was entitled, "Performance Indicators in Education." The Yardstick Project is located at the Alcazar Hotel, 2450 Derbyshire Road, Cleveland, Ohio. With respect to performance contracting, see "Performance Contracting as Catalyst for Reform" in Educational Technology, August, 1969. Beginning in September, 1970, the Educational Development Laboratory will begin a reading program in a contract with the San Diego City Schools. The program will reach 9,600 elementary students reading below grade level. EDL will receive $1,400,000 if it reduces reading disabilities by 25% the first year and 50% the second year, and brings all students up to grade level the third year. EDL will receive more or less money depending on students' achievement. Initial Teaching Alphabet Publications, Inc., of New York declares that it will refund any money a school system spends on its materials and programs if evaluation demonstrates that the ITA program does not improve students' reading and spelling skills. A research project conducted by Professor Frederic B. Nalven

of Yeshiva University showed, parenthetically, that children trained with the initial teaching alphabet are more creative writers than those taught to spell in a traditional manner. The Open Court Publishing Company of LaSalle, Illinois, also guarantees the success of its reading program. Other instructional resource publishers are beginning to develop programs in the performance-contracting area. In a way, this is a form of accountability.

CITATIONS

Rather than encumber this essay with footnotes, we set forth below the citations of books and other items we refer to in the essay. There is some intentional overlapping between the citations and the items mentioned in the bibliography. The Arabic numerals refer to page numbers in the essay.

Page

4 The quote from Aristotle is taken from Book VIII of Politics (Chapter 2, "The Training of Youth").

6 The reference to the Pennsylvania study is from Paul B. Campbell, et. al., Phase I Findings: Educational Quality Assessment (Harrisburgh: Department of Public Instruction, 1968), p. 2.

7 Harold Howe on page 4 of the Harvard Educational Review, Winter, 1968. John Gardner, "National Goals in Education" in Goals for Americans: The Report of the President's Commission on National Goals (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1960), p. 81. Will French, et. al., Behavioral Goals of General Education in High School (New York: Russell Sage Foundation, 1957), pp. 27-28. Ralph Tyler, "Purposes for Our Schools," Bulletin (The National Association of Secondary School Principals), December, 1968, p. 1.

8 The quote on page 8 is from "Teaching in the Seventies: The Challenge and Promise," Grade Teacher, January, 1970, p. 91.

9 The "projections" quote on page 9 is from Bernarr S. Furse and Lyle O. Wright (eds.), Comprehensive Planning in State Education Agencies (Salt Lake City, Utah: Utah State Board of Education, 1968).

10 Bebell's quote is from Edgar L. Morphet and David L. Jesser's Designing Education for the Future No. 5: Emerging Designs for Education (New York: Citation Press, 1968).

12 James W. Guthrie, et. al., Schools and Inequality (New York: The Urban Coalition, 1969).

14 The Guthrie quote is from page 130 of his study.

15 The quote about the Coleman study is on page 113 of the Guthrie book, and the other quote is from page 130. The Coleman study refers to the massive project of Coleman and associates for the United States Office of Education to assess levels of educational opportunity in the United States. See James S. Coleman, et. al., Equality of Educational Opportunity (Washington, D. C.: United States Government Printing Office, 1966). For some acute criticisms of the Coleman report, see the work by Samuel S. Bowles and Henry M. Levin in the Journal of Human Resources, Volume II, Winter, 1968, and also in the same Journal, Volume III, Summer, 1968.

18 Ewald B. Nyquist, "State Organization and Responsibility for Education" in Morphet and Jesser, Ibid., p. 141. For research and findings in the area of intergroup relations education, see John S. Gibson, The Intergroup Relations Curriculum: A Program for Elementary School Education, Volume I (Medford, Massachusetts: Lincoln Filene Center, Tufts University, 1969), pp. 6 - 60.

21 The first quote from the Pennsylvania project is from page 101 of Phase I (Ibid.), while the second quote is from page 1 (on pages 21 and 22 of this essay).

22 National Assessment of Educational Progress: Some Questions and Comments (Washington, D. C.: Department of Elementary School Principals, National Education Association, 1968), Revised Edition, p. 13.

25 The Coleman citation is from page 325 of his study, Ibid.